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ABSTRACT

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The present study compared the effects of assertion with that of progressive relaxation training in systematic desensitization. Nineteen Ss were selected on the basis of exemplifying high debilitating test anxiety according to Alpert and Haber's (1960) Achievement Anxiety Test. Results showed that test anxious Ss who received either relaxation or assertive training experienced a significantly greater reduction in debilitating test anxiety on both the post- ($p < 0.001$) and six week follow-up ($p < 0.01$) measures than no-treatment control Ss with corresponding pre-treatment scores. Although the post-treatment measure indicated that relaxation was significantly more effective than assertion, the six week follow-up failed to reveal a significant difference between the two parameters. In addition, assertive training was shown to bring about a significant reduction in test anxiety in almost half the time as relaxation.

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Introduction

Systematic desensitization (Wolpe, 1958) is perhaps the most extensively explored and most generally endorsed technique of behavior therapy. Although it shares certain commonalities with other counterconditioning procedures, desensitization "constituted a true innovation and the first broadly applicable and operationalized specific treatment program for maladaptive anxiety /Paul, 1969, p. 65/." Within the methodology of desensitization, as developed by Wolpe, the state of relaxation serves as the primary antagonistic response to anxiety. As a result, relaxation plays an essential role in desensitization and assumably competes with and reciprocally inhibits the anxiety-response habit. A number of nuances in procedure have been used in order to attain a suitable state of relaxation (cf., Marquis and Morgan, 1971), but the most popular method has been a modified version of Jacobson's (1938) progressive relaxation, a procedure which originally took several hundred hours of training to master. Even in the shortened form advocated by Wolpe, the systematic training of the various muscles remains a long and time consuming task. What is of more importance, however, is whether such training is even necessary.

The results yielded by Crowder and Thornton (1970) demonstrated that there was no significant difference between Ss who were desensitized by relaxation for fear of a harmless snake, and Ss who simply imagined the anxiety provoking scenes without undergoing instruction in relaxation. Grossberg (1965), in a study of autonomic and muscular responses within brief relaxation training, failed to find any overall differences between relaxed Ss and a group that

just listened to music. Schubot (1966) also noted the lack of significant differences in overall fear change between Ss trained in relaxation and desensitized under hypnosis, and Ss desensitized in the waking state without any relaxation training.

The above studies lend credence to Lang's (1969) observation that, although consistent positive correlations have been discovered between the amount of fear reduction and the amount of time spent in relaxation, there is both a confounding of relaxation with S's motivation to change, as well as the uncertainty of whether such training is actually needed in the first place.

Considering both the lengthy duration and questionable relevancy of relaxation training, the delineation of a more efficient and effective technique parameter within the desensitization paradigm would seem feasible. The act of assertion, that is, the act of making a positive and confident statement, may also be used as an incompatible response to anxiety. "Each act of assertion," Wolpe concluded, "to some extent reciprocally inhibits the concurrent anxiety and slightly weakens the anxiety response habit /Wolpe, 1969, p. 15/."

Relatively few studies have been carried out with the goal of specifically determining the scope and potential applicability of assertion, although the consequences of assertion would appear to be similar to those of relaxation. As a result of the traditional perception of assertion as a supportive or secondary technique to be employed in conjuction with other behavior therapies, the aim of the present study was twofold: First, to explore the advantages of using assertive training within the desensitization procedure as the

sole antagonistic response to maladaptive test anxiety, and second, to compare the effects of this response with that of relaxation in the treatment of high debilitating test anxiety. On the basis of these two purposes, it was hypothesized that (1) both the assertion and relaxation groups would achieve a significantly greater reduction in debilitating test anxiety than the no-treatment controls, and (2), that the treatment group receiving systematic desensitization by assertion would experience a significantly greater reduction in debilitating test anxiety than the group undergoing relaxation treatment.

Method

Subjects

Nineteen students enrolled in the Arts and Sciences College of an urban university served as Ss in this study. Ten male and nine female Ss with ages ranging from 18-21 years and a mean age of 19.5 years participated in the study.

Materials

The Alpert-Haber (1960) Achievement Anxiety Test (AAT) was used as the pre- post- and six week follow-up treatment measure. The AAT consists of a facilitating scale (AAT+) of nine items based on a prototype of the item "Anxiety helps me to do better during examinations and tests," and a debilitating scale (AAT-) of ten items based on the prototype of the item "Anxiety interferes with my performance during examinations and tests." Both scales are administered in one questionnaire by alternating the items, and S answers each item on a five point scale according to the degree an item applies to him. The means and standard deviations of the normative samples tested by

Alpert and Haber are M = 27.28, SD = 4.27 for the AAT+, and M = 26.33, SD = 5.33 for the AAT-. A standard procedure for training in deep muscle relaxation (Wolpe and Lazarus, 1966), and a brief form of relaxation (Wolpe, 1969) were also used in the study.

Procedure

The AAT was administered in a group situation according to standard instructions and 19 Ss were selected on the basis of exemplifying extreme debilitating test anxiety (AAT-> 31.66). The Ss were randomly assigned to serve in one of the following groups with 6 Ss in each treatment group and 7 Ss in the control group: Group A-Desensitization by Relaxation; Group B - Desensitization by Assertion; Group C - No-Treatment Control. The treatment procedure for the two experimental groups was conducted in the following manner: Gp.A-Systematic Desensitization by Relaxation. Once the underlying rationale of desensitization was described to S, treatment proceeded systematically according to a specific set of operations. The initial sessions involved formal training in progressively relaxing the various muscle groups (Wolpe and Lazarus, 1966), and also S constructing a hierarchy consisting of ten items eliciting test anxiety, with the stimulus producing the greatest amount of test anxiety serving as item one, the stimulus second in magnitude as item two, etc. When S reported that he had attained a reasonable degree of relaxation, the remaining sessions were devoted to treatment proper, that is, pairing the imagination of each anxiety item with the relaxed state in a graduated manner. An abbreviated form of deep muscle relaxation

(Wolpe, 1969) was employed once treatment proper commenced. At the beginning of each treatment proper session, S was instructed to raise his left index finger if he experienced any anxiety, whereupon, he was to visualize a "relaxation scene" of resting by a stream on a calm summer's day, until he was able to signal that he again felt relaxed.

From the weakest to the strongest stimulus in the hierarchy, the state of relaxation was coupled with the imagination of the test anxiety items. Scene presentations lasted approximately 20 seconds, with at least 30 seconds of relaxation between presentations. In order for the next higher item to be presented, a criterion of two successive no-anxiety responses had to be attained. After S completed the strongest anxiety-producing item in the hierarchy, a graduated pairing of every item with the relaxed state was conducted in order to ascertain the absence of anxiety from all items. Once this "review" was successfully accomplished, S was readministered the AAT and his score computed.

Gp.B - Systematic Desensitization by Assertion. The rationale, the construction of a hierarchy, the signaling of anxiety, the graduated pairing of incompatible responses, and the hierarchy "review", all followed the same format as in the relaxation group. The dissimilarity in treatment methods, however, results from two procedural variations within the assertive group. First, a list of five assertive statements (1, Tests do not worry me; 2, I am not bothered by any type of exam; 3, I refuse to become upset with the testing situation; 4, If I am nervous before an exam, it will only serve to help me; 5, I will make an excellent mark on this exam.) created by E was presented to S.

From this list, S was instructed to choose the statement he considered to indicate the greatest degree of incompatibility to test anxiety. During treatment, the selected statement served the same function for the assertive group as deep muscle relaxation had for the relaxation group - each represented an antagonistic response to anxiety.

The second way in which desensitization by assertion varied from relaxation was related to the presentation of the test anxiety items during the treatment proper. With each item on the hierarchy, S was told to imagine the anxiety scene for approximately 10 seconds, after which he was instructed to stop visualizing. S was then informed to imagine the scene once again, but this time followed immediately by saying the assertive statement to himself several times while experiencing the scene. The remaining trials for any particular item were imagined with the assertive statement and lasted approximately 15 seconds each. The time between these trials, or sooner if anxiety was signaled, S spent visualizing a predetermined "assertive scene" f 15 secs.(e.g., Immediately directing a waiter to return a well done steak that you had ordered rare). In order for S to be given the next higher test anxiety item, he had to imagine the scene without the assertive statement, and then achieve a criterion of two successive trials of imagining the anxiety item along with saying the assertive statement without signaling any anxiety.

A follow-up study was conducted approximately six weeks after treatment in order to compare the pre- and post-treatment AAT measures with the scores of Ss while they were taking final exams. It appeared that a time encompassing final exams would be ideally suited to measure the efficacy of treatment. All but one control group S returned the AA

Results

The hypothesis that both the assertion and relaxation groups would achieve a significantly greater reduction in AAT- than the no-treatment controls was confirmed in the analysis of variance of the change scores for the three groups. The results of the pre- post- and follow-up measures of AAT- and AAT+ are presented in Tables 1 and 2. Inspection of Table 1 indicates a highly significant difference

TABLE 1

Pre- Post-Treatment Analysis of Variance of AAT- and AAT+ Change Scores

Source	SS	df	MS	F
Treatments	451.06*	2	225.56	14.26**
	26.41†	2	13.20	0.56 ††
Error	253.05	16	15.82	
	375.38	16	23.46	
Total	704.11	18		
	401.79	18		

*AAT-.
†AAT+.
**$p < 0.001$.
††$p > 0.25$

in AAT- on the pre- post-treatment measure ($F = 14.26$, $df = 2/16$, $p < 0.001$), and a failure in AAT+ to yield a significant difference on pre- post-treatment results ($F = 0.56$, $df = 2/16$, $p > 0.25$). Table 2 reveals a significant difference in AAT- on the six week follow-up study ($F = 7.20$, $df = 2/15$, $p < 0.01$), yet once again, AAT+ did not demonstrate a significant difference on the follow-up ($F = 3.11$, $df = 2/15$, $p < 0.10$).

TABLE 2

Pre- Follow-up Analysis of Variance
of AAT- and AAT+ Change Scores

Source	SS	df	MS	F
Treatments	353.44*	2	176.72	7.20**
	177.32†	2	88.66	3.11††
Error	368.18	15	24.54	
	427.18	15	28.47	
Total	721.62	17		
	604.50	17		

*AAT-.
†AAT+.
**$p < 0.01$.
††$p < 0.10$.

In order to test the second hypothesis as to whether the treatment group receiving assertive training would experience a significantly greater reduction in AAT- than the relaxation group, the pre-post- and follow-up differences with respect to AAT- change scores were evaluated by Tukey's post hoc HSD Test (Winer, 1962). Results are presented in Table 3 with the reported p value based on a required mean difference of 3.15 for $p < 0.05$. Inspection of Table 3 indicates that training in deep muscle relaxation is significantly more effective (HSD = 3.29, df = 2/10, $p < 0.05$) in reducing debilitating test anxiety than assertive training. However, this significant difference was not present in the six week follow-up (HSD = 2.39, df = 2/10, $p > 0.10$). Although the second hypothesis was not confirmed, the 6 Ss who underwent assertive training were successfully desensitized in almost

TABLE 3

Mean Comparison of Change Scores of the Two Treatment Groups on AAT- by Tukey's Test for Pre- Post- and Follow-up

Group	Pre- Post- Measure		Follow-up Measure	
	Change Score	HSD Test	Change Score	HSD Test
Relaxation	9.34 (d = 5.34)	3.29**	9.50 (d = 4.83)	2.39*
Assertion	4.00		4.67	

*p > 0.10.
**p < 0.05.

half the time (M = 77.33 minutes) as the Ss in the relaxation group (M = 139.50 minutes).

Discussion

The results of the present study clearly indicate that test anxious Ss undergoing a treatment of systematic desensitization by either relaxation or assertion experience a significantly greater reduction in high debilitating test anxiety than no-treatment control Ss with corresponding pre-treatment test anxiety scores.

While the post-treatment measure showed that the parameter of relaxation was significantly more effective than assertion in eliminating maladaptive test anxiety, the six week follow-up measure failed to exhibit a continuance in the significant difference. Although the findings would seem to more favorably support relaxation

as the optimal uncompatible response to test anxiety, assertion represented not only a more expedient means of achieving a significant reduction in AAT-, but also a technique which is equivalent to relaxation in its capability to reciprocally inhibit test anxiety. Moreover, the independence of assertion as a treatment procedure should be acknowledged, especially since the role of assertive training has tradionally been conceptualized as a secondary technique primarily employed only in conjunction with other therapeutic methods.

The failure of the present study to obtain a significant increase in facilitating test anxiety supports the results of Mitchelle and Ingram (1970), who demonstrated that group desensitization was more effective than either a motivated or a non-motivated no-treatment group in reducing AAT-, but left AAT+ unchanged. It appears that AAT+ is affected by two factors operating within desensitization. Since the treatment objective of desensitization is to alleviate rather than enhance the intensity of anxiety, it follows that a greater emphasis is placed on eliminating AAT- than elevating its counterpart. Secondly, AAT+ is best interpreted as a task relevant drive or high drive for achievement, rather than anxiety of a facilitative nature (Willoughby, Parker, Fischer, and Given, 1972). Thus, it is unlikely that the nature of the present task would elicit task relevant responses from S's repetoire.

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